

ABSTRACT:

A plurality of metallic telephone lines carrying both baseband POTS (plain old telephone service) and DSL (digital subscriber line) or ADSL (asymmetric digital subscriber line) signals originate at customer premises and pass through a common field cabinet enroute to a telephone central office. Baseband POTS signals flow in an undisturbed manner through the field cabinet and maintain the normal, highly reliable, communication between the subscriber premises and the central office telephone switch. At the field cabinet, DSL/ADSL signals are removed from the metallic telephone line and are then communicated between the field cabinet and the central office using fiber optic broadband transmission. Fiber optic transmission increases the allowed distance between the ADSL transceiver located at the customer location and the respective ADSL transceiver located in the telephone central office. In one arrangement at the optical fiber, DSL and ADSL signals are retained in their 2B1Q, DMT, QAM or CAP analog format and are simply frequency translated in the process of frequency division multiplex (FDM) transmission. In another arrangement the analog data is converted by an analog front end of an ADSL modem into digital signals which are then made into a serial signal for transmission on the fiber optic cable. The arrangements allow the provision of ADSL service to customers beyond the distance limit normally imposed by a completely metallic telephone line. It is understood that this arrangement is equally applicable to a variety of DSL (digital subscriber line) signals.